

(iv) The manufacturer must develop either deterioration factors or aged components to use on EDV testing by generating durability data in accordance with § 86.1823-01, 86.1824-01, and/or 86.1825-01 on a minimum of 25 percent of the manufacturer's projected sales (based on durability groups) that is equipped with unproven emission control systems.

(v) The manufacturer must complete the 25 percent durability requirement before the remainder of the manufacturer's sales equipped with unproven emission control systems is certified using manufacturer-determined assigned deterioration factors.

(c) *Emission component durability.* The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the useful life of the vehicles in actual use (or alternative intervals as permitted in § 86.1805-01).

[64 FR 23925, May 4, 1999, as amended at 65 FR 59974, Oct. 6, 2000]

§ 86.1827-01 Test group determination.

This section applies to the grouping of vehicles into test groups within a durability group. The vehicles covered by an application within a durability group shall be divided into test groups based on the following criteria. The manufacturer shall use good engineering judgment in grouping vehicles into test groups.

(a) To be included in the same test group, vehicles must be identical in all following respects:

- (1) Durability group;
- (2) Engine displacement (within a total band width of 15 percent of the largest displacement or 50 CID, whichever is larger);
- (3) Number of cylinders or combustion chambers;
- (4) Arrangement of cylinders or combustion chambers (e.g. in-line, v-shaped);
- (5) Subject to the same emission standards, except that a manufacturer may request to group vehicles into the same test group as vehicles subject to more stringent standards, so long as all the vehicles within the test group are certified to the most stringent standards applicable to any vehicle within

that test group. Light-duty trucks which are subject to the same emission standards as light-duty vehicles with the exception of the light-duty truck idle CO standard and/or total HC standard may be included in the same test group.

(b) Where vehicles are of a type which cannot be divided into test groups based on the criteria listed above (such as non-cylinder engines), the Administrator will establish test groups for those vehicles based upon the features most related to their exhaust emission characteristics.

(c) Manufacturers may further divide groups determined under paragraph (a) of this section providing the Administrator is notified in advance of any such changes in writing.

(d) Manufacturers may request the Administrator's approval to combine vehicles into a single test group which would normally not be eligible to be in a single test group. The petition should provide:

- (1) Substantial evidence that all the vehicles in the larger grouping will have the similar levels of emissions;
 - (2) Evidence of equivalent component durability over the vehicle's useful life;
 - (3) Evidence that the groups will result in sufficient in-use verification program data, appropriate tracking in use, and clear liability for the Agency's recall program; and
 - (4) A statement that all vehicles within a test group are certified to the most stringent standards applicable to any vehicle within that test group.
- (e) Unless otherwise approved by the Administrator, a manufacturer of hybrid electric vehicles must create separate test groups based on both the type of battery technology employed by the HEV and upon features most related to their exhaust emission characteristics.

[64 FR 23925, May 4, 1999, as amended at 65 FR 6864, Feb. 10, 2000; 65 FR 59974, Oct. 6, 2000]

§ 86.1828-01 Emission data vehicle selection.

(a) *FTP and SFTP testing.* Within each test group, the vehicle configuration shall be selected which is expected to be worst-case for exhaust emission compliance on candidate in-use vehicles, considering all exhaust emission

constituents, all exhaust test procedures, and the potential impact of air conditioning on test results. The selected vehicle will include an air conditioning engine code unless the worst-case vehicle configuration selected is not available with air conditioning. This vehicle configuration will be used as the EDV calibration.

(b) *Evaporative/Refueling testing.* Vehicles of each evaporative/refueling family will be divided into evaporative/refueling emission control systems.

(1) The vehicle configuration expected to exhibit the highest evaporative and/or refueling emission on candidate in-use vehicles shall be selected for each evaporative/refueling family and evaporative refueling emission system combination from among the corresponding vehicles selected for FTP and SFTP testing under paragraph (a) of this section. Separate vehicles may be selected to be tested for evaporative and refueling testing.

(2) Each test group must be represented by both evaporative and refueling testing (provided that the refueling standards are applicable) before it may be certified. That required testing may have been conducted on a vehicle in another test group provided the tested vehicle is a member of the same evaporative/refueling family and evaporative/refueling emission system combination and it was selected for testing in accordance with the provisions of paragraph (b)(1) of this section.

(3) For evaporative/refueling emission testing, the vehicle(s) selected shall be equipped with the worst-case evaporative/refueling emission hardware available on that vehicle considering such items as canister size and material, fuel tank size and material, purge strategy and flow rates, refueling characteristics, and amount of vapor generation.

(c) *Cold CO testing.* For cold temperature CO exhaust emission compliance for each durability group, the vehicle expected to emit the highest CO emissions at 20 degrees F on candidate in-use vehicles shall be selected from the test vehicles selected in accordance with paragraph (a) of this section.

(d) *Certification Short Test testing.* For CST exhaust emission compliance for each durability group, the vehicle ex-

pected to emit the highest CST emissions on candidate in-use vehicles shall be selected from the vehicles selected in accordance with paragraph (a) of this section. The manufacturer may elect to submit a compliance statement in lieu of test data under the provisions of § 86.1829-01.

(e) The manufacturer may select, using good engineering judgement, an equivalent or worst-case configuration in lieu of testing the vehicle selected in paragraphs (a) through (d) of this section. Carryover data satisfying the provisions of § 86.1839-01 may also be used in lieu of testing the configuration selected in paragraphs (a) through (d) of this section.

(f) The manufacturer shall use good engineering judgment in making selections of vehicles under this section.

§ 86.1829-01 Durability and emission testing requirements; waivers.

(a) *Durability demonstration.* (1) One durability demonstration is required for each durability group.

(2) The configuration of the DDV is determined according to the provisions of § 86.1822-01.

(3) The DDV shall be tested and accumulate service mileage according to the provisions of §§ 86.1831-01, 86.1823-01, 86.1824-01 and 86.1825-01. Small volume manufacturers and small volume test groups may optionally meet the requirements of § 86.1838-01.

(b) *Emissions demonstration—(1) FTP and SFTP Exhaust Testing—(i) Testing at low altitude.* One EDV shall be tested in each test group for exhaust emissions using the FTP and SFTP test procedures of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01 of this subpart.

(ii) *Testing at high altitude.* For high-altitude exhaust emission compliance for each test group, the manufacturer shall follow one of the following two procedures:

(A) One EDV shall be tested in each test group for exhaust emissions using the FTP test procedures of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01; or

(B) In lieu of testing vehicles according to the provisions of paragraph